

for recording the information recording program, an information reproducing apparatus for reproducing the recorded broadcasting information from the recording medium, an information reproducing method, an information reproducing program, and an information  
5 recording medium for recording the information reproducing program.

In order to solve the problem, a first invention provides an information recording apparatus for recording broadcasting information on a recording medium such as a hard disk, the broadcasting information being constituted of unit information (TS-Packet) which  
10 has a predetermined amount of information and includes different types of contents, each type including one or more contents, the apparatus comprising: a generating device such as a controller for generating contents group information based on correlation information which is included in the received broadcasting  
15 information and indicates a correlation between the contents, the contents group information including identification information for identifying a relationship between the unit information and the content and type information indicating a type of the content, the contents group information indicating a contents group to include  
20 the one or more contents, and a recording device such as a controller for recording the generated contents group information on the recording medium with the broadcasting information.

According to the first invention, since the contents group information is recorded separately from the broadcasting information,  
25 when the broadcasting information is reproduced, it is possible to recognize a combination and so on of contents included in the

broadcasting information without the need for reproducing the broadcasting information itself.

In a preferred first embodiment of the first invention, according to the information recording apparatus of the first invention, the  
5 broadcasting information is broadcasted by BS digital broadcasting and the correlation information is descriptors broadcasted by BS digital broadcasting.

According to the embodiment, the content information is generated based on the descriptors included in the broadcasting  
10 information broadcasted by BS digital broadcasting, thereby correctly generating the information with ease.

In order to solve the problem, a second invention provides an information reproducing apparatus for reproducing the broadcasting information from the recording medium on which the contents group  
15 information is recorded with the broadcasting information by the information recording apparatus of claim 1 or 2, the reproducing apparatus comprising: a selecting device such as an operation part which selects a content to be reproduced before the broadcasting information is reproduced, and a generating device such as an OSD  
20 (On Screen Display) generating part which generates a display signal for displaying the contents of the contents group information corresponding to the contents group including the selected content.

According to the second invention, the contents group information is recorded separately from the broadcasting information  
25 and the contents of the contents group information are displayed before the broadcasting information is reproduced. Thus, it is possible to recognize the combination and so on of contents included

in the broadcasting information without the need for reproducing the broadcasting information itself.

In order to solve the problem, a third invention provides an information recording method for recording broadcasting information such as a transport stream on a recording medium such as a hard disk, the broadcasting information being constituted of unit information (TS-Packet) which has a predetermined amount of information and includes different types of contents, each type including one or more contents, the method comprising: a generating process of generating contents group information based on correlation information which is included in the received broadcasting information and indicates a correlation between the contents, the contents group information including identification information for identifying the relationship between the unit information and the content and type information indicating the type of the content, the contents group information indicating a contents group to include the one or more contents, and a recording process of recording the generated contents group information on the recording medium with the broadcasting information.

According to the third invention, the contents group information is recorded separately from the broadcasting information. Thus, it is possible to recognize the combination and so on of contents included in the broadcasting information without the need for reproducing the broadcasting information itself.

In a preferred first embodiment of the third invention, according to the information recording method of the third invention, the broadcasting information is broadcasted by BS digital broadcasting

and the correlation information is descriptors broadcasted by BS digital broadcasting.

According to the embodiment, the contents group information is generated based on the descriptors included in the broadcasting  
5 information broadcasted by BS digital broadcasting. Thus, it is possible to accurately generate the information with ease.

In order to solve the problem, a forth invention provides an information reproducing method for reproducing the broadcasting information from the recording medium on which the contents group  
10 information is recorded with the broadcasting information by the information recording method of claim 4 or 5, the reproducing method comprising: a selecting process of selecting a content to be reproduced before the broadcasting information is reproduced, and a generating process of generating a display signal for displaying  
15 the contents of the contents group information corresponding to the contents group including the selected content.

According to the forth invention, the contents group information is recorded separately from the broadcasting information and the contents of the contents group information are displayed before  
20 the broadcasting information is reproduced. Thus, it is possible to recognize the combination and so on of contents included in the broadcasting information without the need for reproducing the broadcasting information itself.

In order to solve the problem, the fifth invention causes a  
25 recording computer to function as a generating device and a recording device, the recording computer being included in an information recording apparatus for recording broadcasting information such

as a transport stream on a recording medium such as a hard disk, the broadcasting information being constituted of unit information which has a predetermined amount of information and includes different types of contents, each type including one or more contents, 5 the generating device generating contents group information based on correlation information which is included in the received broadcasting information and indicates a correlation between the contents, the contents group information including identification information for identifying the relationship between the unit 10 information and the content and type information indicating the type of the content, the contents group information indicating a contents group to include the one or more contents, the recording device recording the generated contents group information on the recording medium with the broadcasting information.

15 According to the fifth invention, the recording computer functions in such a manner as to record the contents group information separately from the broadcasting information. Thus, when the broadcasting information is reproduced, it is possible to recognize the combination and so on of contents included in the broadcasting 20 information without the need for reproducing the broadcasting information itself.

In a preferred first embodiment of the fifth invention, according to the information recording program of the fifth invention, the broadcasting information is broadcasted by BS digital broadcasting 25 and the correlation information is descriptors broadcasted by BS digital broadcasting.

According to the embodiment, the recording computer functions in such a manner as to generate the contents group information based on the descriptors included in the broadcasting information broadcasted by BS digital broadcasting. Thus, it is possible to  
5 correctly generate the information with ease.

In order to solve the problem, the sixth invention causes a reproducing computer to function as a selecting device and a generating device, the reproducing computer being included in the information reproducing apparatus for reproducing the broadcasting  
10 information from the recording medium on which the contents group information is recorded with the broadcasting information by the information recording apparatus of claim 1 or 2, the selecting device selecting a content to be reproduced before the broadcasting information is reproduced, the generating device generating a  
15 display signal for displaying the contents of the contents group information corresponding to the contents group including the selected content.

According to the sixth invention, the contents group information is recorded separately from the broadcasting information and the  
20 reproducing computer functions in such a manner as to display the contents of the contents group information before the broadcasting information is reproduced. Thus, it is possible to recognize the combination and so on of contents included in the broadcasting information without the need for reproducing the broadcasting  
25 information itself.

In order to solve the problem, in the seventh invention, the information recording program according to the fifth invention is recorded so as to be read by the recording computer.

When the program for recorded information according to the fifth invention is recorded, the program is read and executed by the recording computer, so that the recording computer functions in such a manner as to record the contents group information separately from the broadcasting information. Thus, when the broadcasting information is reproduced, it is possible to recognize the combination and so on of contents included in the broadcasting information without the need for reproducing the broadcasting information itself.

When the program for recorded information according to the preferred first embodiment of the fifth invention is recorded, the program is read and executed by the recording computer, so that the recording computer functions in such a manner as to generate the contents group information based on the descriptors included in the broadcasting information on BS digital broadcasting. Thus, it is possible to correctly generate the information with ease.

In order to solve the problem, in the eighth invention, the information reproducing program according to the sixth invention is recorded so as to be read by the reproducing computer.

The program is read and executed by the reproducing computer, so that the contents group information is recorded separately from the broadcasting information and the reproducing computer functions in such a manner as to display the contents of the contents group information before the broadcasting information is reproduced.

CLAIMS

1. An information recording apparatus for recording broadcasting  
information on a recording medium such as a hard disk, the broadcasting  
5 information being constituted of unit information (TS-Packet) which  
has a predetermined amount of information and includes different  
types of contents, each type including one or more contents,  
the apparatus comprising:

a generating device for generating contents group information  
10 based on correlation information which is included in the received  
broadcasting information and indicates a correlation between the  
contents, the contents group information including identification  
information for identifying a relationship between the unit  
information and the content and type information indicating a type  
15 of the content, the contents group information indicating a contents  
group to include the one or more contents, and

a recording device for recording the generated contents group  
information on the recording medium with the broadcasting  
information.

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2. The information recording apparatus according to claim 1,  
wherein the broadcasting information is broadcasted by BS digital  
broadcasting, and

the correlation information is a descriptor broadcasted by BS  
25 digital broadcasting.



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3. An information reproducing apparatus for reproducing the broadcasting information from the recording medium on which the contents group information is recorded with the broadcasting information by the information recording apparatus of claim 1 or

5 2,

the reproducing apparatus comprising:

a selecting device which selects a content to be reproduced before the broadcasting information is reproduced, and

10 a generating device which generates a display signal for displaying contents of the contents group information corresponding to the contents group including the selected content.

4. An information recording method for recording broadcasting information on a recording medium, the broadcasting information  
15 being constituted of unit information which has a predetermined amount of information and includes different types of contents, each type including one or more contents,

the method comprising:

20 a generating process of generating contents group information based on correlation information which is included in the received broadcasting information and indicates a correlation between the contents, the contents group information including identification information for identifying a relationship between the unit information and the content and type information indicating a type  
25 of the content, the contents group information indicating a contents group to include the one or more contents, and

a recording process of recording the generated contents group information on the recording medium with the broadcasting information.

- 5 5. The information recording method according to claim 4, wherein the broadcasting information is broadcasted by BS digital broadcasting, and

the correlation information is a descriptor broadcasted by BS digital broadcasting.

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6. An information reproducing method for reproducing the broadcasting information from the recording medium on which the contents group information is recorded with the broadcasting information by the information recording method of claim 4 or 5,

- 15 the reproducing method comprising:

a selecting process of selecting a content to be reproduced before the broadcasting information is reproduced, and

a generating process of generating a display signal for displaying contents of the contents group information corresponding  
20 to the contents group including the selected content.

7. An information recording program for causing a recording computer to function as a generating device and a recording device, the recording computer being included in an information recording  
25 apparatus for recording broadcasting information on a recording medium, the broadcasting information being constituted of unit information which has a predetermined amount of information and

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includes different types of contents, each type including one or more contents,

the generating device generating contents group information based on correlation information which is included in the received  
5 broadcasting information and indicates a correlation between the contents, the contents group information including identification information for identifying a relationship between the unit information and the content and type information indicating a type of the content, the contents group information indicating a contents  
10 group to include the one or more contents,

the recording device recording the generated identification information, type information, and contents group information on the recording medium with the broadcasting information.

15 8. The information recording program according to claim 7, wherein the broadcasting information is broadcasted by BS digital broadcasting, and

the correlation information is a descriptor broadcasted by BS digital broadcasting.

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9. An information reproducing program for causing a reproducing computer to function as a selecting device and a generating device, the reproducing computer being included in an information reproducing apparatus for reproducing broadcasting information from  
25 a recording medium on which contents group information is recorded with the broadcasting information by the information recording apparatus of claim 1 or 2,

the selecting device selecting a content to be reproduced before the broadcasting information is reproduced,

the generating device generating a display signal for displaying contents of the contents group information corresponding to a  
5 contents group including the selected content.

10. An information recording medium, wherein the information recording program of claim 7 or 8 is recorded so as to be read by a recording computer.

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11. An information recording medium, wherein the information reproducing program according to claim 9 is recorded so as to be read by a reproducing computer.